CLAIM AMENDMENTS

1. (Currently Amended) A magnetoresistance sensor ~~element~~ comprising:

a sensor substrate;

a control circuit for the magnetoresistance sensor, disposed on the sensor substrate;

a resin film on the control circuit; and

a sensing portion ~~supported by~~ having a microfine wiring pattern and disposed on the ~~sensor substrate; and a~~ the resin film ~~between the sensor substrate and the sensing portion~~.

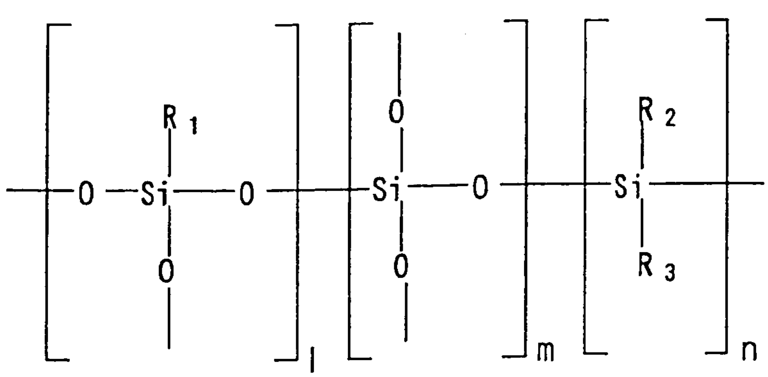
Claim 2 (Cancelled).

3. (Currently Amended) The magnetoresistance sensor ~~element~~ according to claim ~~2~~ 1, wherein the microfine wiring pattern comprises plural wiring patterns adjacent each other.

4. (Currently Amended) The magnetoresistance sensor ~~element~~ according to claim 1, wherein the resin film is a cured polymer film of a curable polymer selected from the group consisting of silicone polymers, polyimide polymers, polyimide silicone polymers, polyarylene ether polymers, bisbenzocyclobutene polymers, polyquinoline, perfluorohydrocarbon, fluorocarbon polymers, and aromatic hydrocarbon polymers.

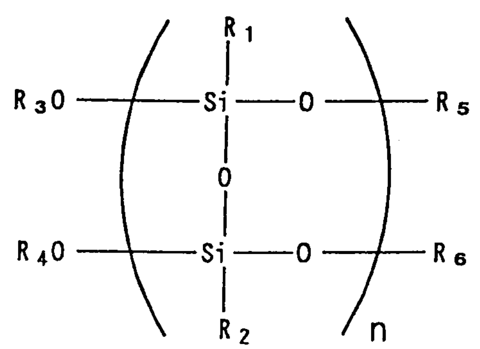
5. (Currently Amended) The magnetoresistance sensor ~~element~~ according to claim 4, wherein the curable polymer is a photo-curing polymer.

6. (Currently Amended) The magnetoresistance sensor ~~element~~ according to claim 1, wherein the ~~cured polymer~~ resin film is a cured film of a silicone polymer represented by the general formula ~~(1)~~



wherein R_1, R_2, and R_3 may be the same or different, are selected from the group consisting of an aryl group, a hydrogen atom, an aliphatic alkyl group, a hydroxyl group, a trialkylsilyl group, and a functional group having an unsaturated bond, l, m, and n are integers and ~~at least 0~~ $l + m + n \geq 1$, and the silicone polymer has a weight-average molecular weight of not less than 1,000.

7. (Twice Amended) The magnetoresistance sensor ~~element~~ according to claim 1, wherein the resin film is a cured film of a silicone polymer represented by the general formula



wherein R_1 and R_2 may be the same or different, and are selected from the group consisting of an aryl group, a hydrogen atom, an aliphatic alkyl group, and a functional group having an unsaturated bond, R_3, R_4, R_5, and R_6 may be the same or different, and are selected from the group consisting of a hydrogen atom, an aryl group, an aliphatic alkyl group, a trialkylsilyl group, and a functional group having an unsaturated bond, and n is an integer and at least 1, and the silicone polymer has a weight-average molecular weight of not less than 1,000.

8. (Currently Amended) The magnetoresistance sensor ~~element~~ according to claim 4, wherein the resin film comprises plural layers and each of the layers comprises a cured polymer film of a ~~different cured~~ differently curable polymer.

9. (Currently Amended) The magnetoresistance sensor ~~element~~ according to claim 8, wherein each of the layers comprises a cured film of a curable polymer having a respective, different molecular weight.

10. (Currently Amended) The magnetoresistance sensor ~~element~~ according to claim 9, wherein the layers include a layer of a cured polymer film comprising a silicone polymer having a weight-average molecular weight of not less than 100,000 and a layer of a cured polymer film comprising a silicone polymer having a weight-average molecular weight of not more than 100,000.

11. (Currently Amended) The magnetoresistance sensor ~~element~~ according to claim 8, wherein an uppermost layer of the layers comprises a cured polymer film of a photo-curing polymer.

Claim 12. (Cancelled).

13. (Currently Amended) A method of fabricating a sensor element, comprising:

applying a solution including a thermosetting polymer to a sensor substrate to form a curable polymer film;

heating the curable polymer film to a temperature not lower than a fusing temperature and lower than a curing temperature of the thermosetting polymer so that the curable polymer film flows on the sensor substrate;

heating the curable polymer film to a temperature not lower than the curing temperature to cure the curable polymer and form a resin film; and

forming a sensor element on the resin film ~~after curing of the resin film~~.

14. (Previously Amended) The method of fabricating a sensor element according to claim 13, wherein the thermosetting polymer is selected from the group consisting of a silicone polymer, a polyimide polymer, a polyimide silicone polymer, a polyarylene ether polymer, a bisbenzocyclobutene polymer, a polyquinoline polymer, a perfluorohydrocarbon polymer, a fluorocarbon polymer, and an aromatic hydrocarbon polymer.

15. (New) An air flow sensor comprising:

a silicon substrate;

a supporting film on the silicon substrate;

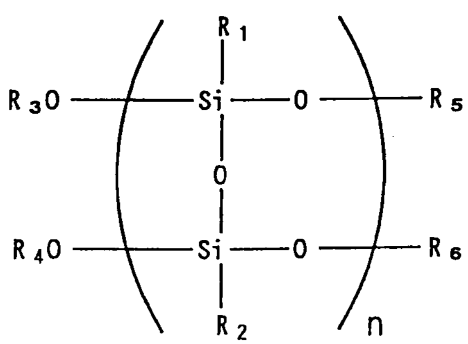
a resin film on the supporting film; and

a sensing portion, including a microfine wiring pattern, on the resin film.

16. (New) The air flow sensor according to claim 15, wherein the resin film is a cured polymer film of a curable polymer selected from the group consisting of silicone polymers, polyimide polymers, polyimide silicone polymers, polyarylene ether polymers, bisbenzocyclobutene polymers, polyquinoline, perfluorohydrocarbon, fluorocarbon polymers, and aromatic hydrocarbon polymers.

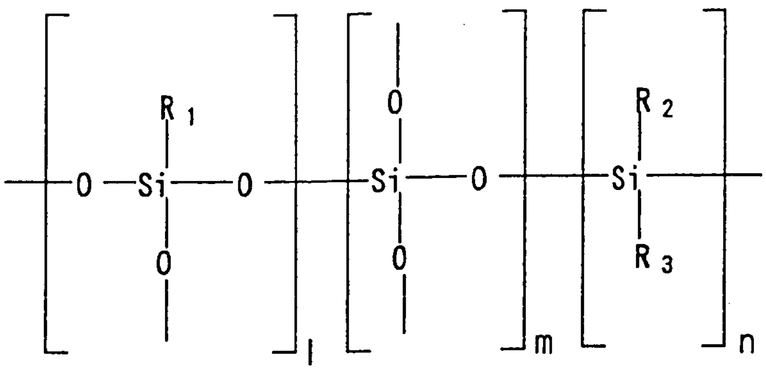
17. (New) The air flow sensor according to claim 16, wherein the curable polymer is a photo-curing polymer.

18. (New) The air flow sensor according to claim 17, wherein the resin film is a cured film of a silicone polymer represented by the general formula



wherein R_1, R_2, and R_3 may be the same or different, are selected from the group consisting of an aryl group, a hydrogen atom, an aliphatic alkyl group, a hydroxyl group, a trialkylsilyl group, and a functional group having an unsaturated bond, 1, m, and n are integers and $l + m + n \geq 1$, and the silicone polymer has a weight-average molecular weight of not less than 1,000.

19. (New) The air flow sensor according to claim 15, wherein the film is a cured film of a silicone polymer represented by the general formula



wherein R_1 and R_2 may be the same or different, and are selected from the group consisting of an aryl group, a hydrogen atom, an aliphatic alkyl group, and a functional group having an unsaturated bond, R_3, R_4, R_5, and R_6 may be the same or different, and are selected from the group consisting of a hydrogen atom, an aryl group, an aliphatic alkyl group, a trialkylsilyl group, and a functional group having an unsaturated bond, and n is an integer and at least 1, and the silicone polymer has a weight-average molecular weight of not less than 1,000.

20. (New) The air flow sensor according to claim 16, wherein the resin film comprises plural layers and each of the layers comprises a cured polymer film of a differently curable polymer.

21. (New) The air flow sensor according to claim 20, wherein each of the layers comprises a cured film of a curable polymer having a respective, different molecular weight.

22. (New) The air flow sensor according to claim 21, wherein the layers include a layer of a cured polymer film comprising a silicone polymer having a weight-average molecular weight of not less than 100,000 and a layer of a cured polymer film comprising a silicone polymer having a weight-average molecular weight of not more than 100,000.

23. (New) The air flow sensor according to claim 20, wherein an uppermost layer of the layers comprises a cured polymer film of a photo-curing polymer.